

Amendments to the Specification

- 1) Please insert the following subtitle at page 1, below the title:

Field of the Invention

- 2) Please insert the following subtitle at page 1, line 13:

Background

- 3) Please insert the following subtitle and accompanying text at page 8, line 17:

Summary of the Invention

The present invention relates to an installation in which an operation of crosslinking a coating, such as an ink or varnish coating, is carried out by ultraviolet radiation or by an electron beam, in the presence of a gas mixture with a controlled residual oxygen content, the installation comprising a chamber having one or more UV lamps or a source of accelerated electrons, necessary for carrying out the crosslinking operation, which is characterized in that the installation includes an entry device adjacent the chamber and comprising at least the following three components, seen in succession by the running product to be treated: a labyrinth system, means for injecting an inert gas forming a gas knife, and a channel.

- 4) Please insert the following subtitle and accompanying text at page 8, after the above-inserted subtitle Summary of the Invention and accompanying text:

Brief Description of the Figures

For a further understanding of the nature and objects for the present invention, reference should be made to the following detailed description, taken in conjunction with the accompanying drawings, in which like elements are given the same or analogous reference numbers and wherein:

- Figure 1 illustrates entry and exit devices.
- Figure 2 illustrates a chamber entry device and a chamber exit device according to the present invention.

- Figure 3 illustrates shows the result of trials carried out on equipment according to the invention comprising the entry/exit systems described within the context of figure 2.
- Figure 4 illustrates the results such as those obtained with equipment of the prior art provided with entry and exit devices according to figure 1.
- Figure 5 illustrates a comparison of the results obtained in the case of figure 3 with those obtained in the case of figure 4.
- Figure 6 illustrates a modification of the chamber entry device.
- Figure 7 illustrates the chamber exit device.

- 5) Please insert the following subtitle at page 8, after the above-inserted subtitle Brief Description of the Figures and accompanying text:

Description of Preferred Embodiments

- 6) Please replace the paragraph at page 6, line 35, with the following:

Each of the entry and exit devices typically consist (see ~~figure~~ Figure 1 below; the reader may also refer to ~~figure~~ Figure 2 of said document WO 02/40738) of three components positioned in series and seen in succession by the treated substrate, namely a channel, a gas injection slot and a "labyrinth". The concept of a "labyrinth" is explained in detail in this prior document, and relates in fact to a system of open grooves facing the internal space (gap) of the entry (or exit) device in question (through which gap the substrate to be treated runs) and forming a labyrinth.

- 7) Please replace the paragraph at page 8, line 18, with the following:

As an illustration, a trial was carried out for controlling the atmosphere on an industrial prototype of the type shown in ~~figure~~ Figure 1, under the conditions given below. In everything that follows, the volumes will be expressed as standard liters per m² of treated substrate (and not, as is conventional, in m³/h). This is very advantageous for being able to compare machines of different widths.

- 8) Please replace the paragraph at page 8, line 29, with the following:
- the presence of entry/exit devices based on three components (channel, injection slot and labyrinth) as described above in relation to ~~figure~~ Figure 1;
- 9) Please replace the paragraph at page 8, line 36, with the following:
- Under such operating conditions, the trials consisted in measuring the oxygen concentration inside the chamber and at about 0.8 mm from the surface of the roll, by injecting about 1.4 Sl/m² of nitrogen into each entry/exit device, with a 700 mm wide product running at speeds of between 50 and 250 m/min. The results of the measurements showed that the oxygen concentration was between 6000 and 8000 ppm depending on the speed used (these results are shown in ~~figure~~ Figure 4 below). By using higher nitrogen volumes (3.25 standard liters/m² in each entry/exit device). It was possible to reduce this concentration to about 3000 ppm.
- 10) Please replace the paragraph at page 9, line 33, with the following:
- The equipment according to the invention is based on the use of two devices, a chamber entry device and a chamber exit device (see ~~figure~~ Figure 2 below):
- 11) Please replace the paragraph at page 12, line 17, with the following:
- Figure 3 below shows the result of trials carried out on equipment according to the invention comprising the entry/exit systems described within the context of ~~figure~~ Figure 2, which trials consisted in measuring the oxygen content within the chamber, about 5 mm from the treated roll, for speeds of between 50 and 250 m/min and with nitrogen injected into each of the entry/exit devices at about 1.4 to 3.25 standard liters/m² (the abbreviation Sl/m² used in the figures must be understood as actually denoting standard liters/m² of substrate treated).
- 12) Please replace the paragraph at page 12, line 29, with the following:
- In ~~figure~~ Figure 3, it should be noted that there are three curves:

- 13) Please replace the paragraphs beginning at page 13, line 13, with the following

Thus, ~~figure~~ Figure 4 shows the results, already mentioned above, such as those obtained with equipment of the prior art provided with entry and exit devices according to ~~figure~~ Figure 1.

In ~~figure~~ Figure 4, it should be noted that there are three curves:

- 14) Please replace the paragraph at page 13, line 37, with the following:

Figure 5 shows a comparison of the results obtained in the case of figure 3 with those obtained in the case of ~~figure~~ Figure 4. Plotted on the y axis is the oxygen content reduction (in %) achieved thanks to the equipment according to the invention.

- 15) Please replace the paragraphs beginning at page 14, line 16, with the following:

In this configuration, the chamber entry device (shown in ~~figure~~ Figure 6) has been modified – it consists here of five components, namely in succession: a channel, a first gas injection slot, a labyrinth, a second gas injection slot, followed by another channel.

As regards the chamber exit device (~~figure~~ Figure 7), this is identical to that of ~~figure~~ Figure 2, so as to consist of three successive components, namely a channel, a nitrogen injection slot, followed by a labyrinth.

- 16) Please replace the paragraphs beginning at page 15, line 1, with the following:

The configuration illustrated by this embodiment makes the detachment of the air boundary layer located at the surface of the film to be even more effective (compared with the configuration described previously in conjunction with ~~figure~~ Figure 2), and therefore provides greater insurance that the air conveyed to the surface of the film will not penetrate the treatment chamber.

In fact, the entry device of ~~figure~~ Figure 6 may be considered as a combination of the entry devices of ~~figure~~ Figure 1 and ~~figure~~ Figure 2:

- 17) Please replace the paragraph at page 15, line 21, with the following:

To measure the effectiveness of the latter embodiment, experiments on controlling the atmosphere in a chamber equipped with entry/exit devices such as those illustrated in conjunction with ~~figure~~ Figures 6 and 7 were carried out. The results are given in table 1 below.

- 18) Please replace the paragraph at page 16, line 11, with the following:

The results show that, thanks to the equipment of ~~figures~~ Figures 6 and 7, UV irradiation treatment may be carried out in an inert nitrogen atmosphere containing less than 40 ppm oxygen, whatever the speed, with a total volume of nitrogen between 4.2 and 5.8 SI/m² (and therefore in general less than the volumes required within the context of the embodiment shown in ~~figure~~ Figure 2).

- 19) Please insert the following paragraph at page 16, line 39:

It will be understood that many additional changes in the details, materials, steps and arrangement of parts, which have been herein described in order to explain the nature of the invention, may be made by those skilled in the art within the principle and scope of the invention as expressed in the appended claims. Thus, the present invention is not intended to be limited to the specific embodiments in the examples given above.

- 20) Please replace the subtitle at page 17, line 1, with the following text:

CLAIMS What is claimed is: